

A large, high-quality photograph of a rugged mountain landscape, likely in the Lake District. The foreground shows a grassy slope with a stone wall and a few sheep. In the background, a prominent mountain peak rises under a cloudy sky.

# Generative AI for HEOR: Potential, Challenges, and Future Directions

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**R-HTA 24 Panel | Dr. Robert Smith | June 2024**



[rsmith@darkpeakanalytics.com](mailto:rsmith@darkpeakanalytics.com)



<https://github.com/dark-peak-analytics>






<https://www.linkedin.com/company/dark-peak-analytics>


# My experience




**Sick Sicker Model**

Functions without a test are **red** and those with a test are **green**. Hover over nodes for more information. Click on  to request an AI generated summary of the corresponding function,  to open the file in RStudio, or on  to load its contents into a new browser tab.

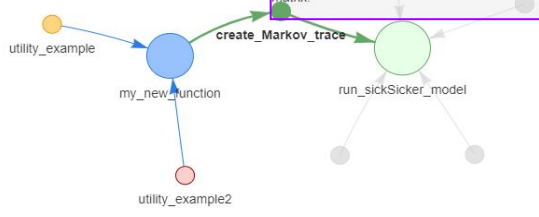
create\_Markov\_trace ▼

 Edit

**AI summary - create\_Markov\_trace** 

The 'create\_Markov\_trace' function takes in a transition matrix, time horizon, state names, and initial trace as arguments. It first checks that the state names are of class character and the initial trace is of class numeric. It also validates that the lengths of state names and initial trace match, and that the dimensions of the transition matrix are consistent with the number of states.

The function then creates a Markov trace matrix with the specified time horizon and state names. It populates the initial trace in the first row of the matrix and calculates subsequent trace rows by multiplying the previous row with the transition matrix. Finally, the function returns the Markov trace matrix.



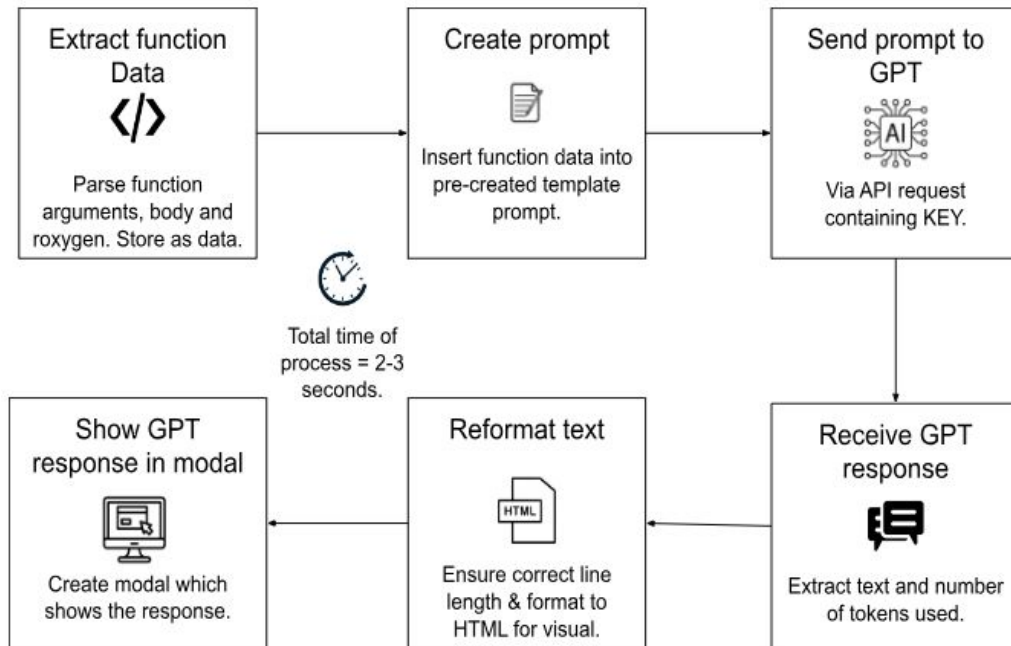
```
graph LR; utility_example((utility_example)) --> my_new_function((my_new_function)); utility_example2((utility_example2)) --> my_new_function; my_new_function --> create_Markov_trace[create_Markov_trace]; create_Markov_trace --> run_sickSicker_model((run_sickSicker_model));
```

<https://github.com/dark-peak-analytics/assertHE>



# My experience

**Training resources / open source models for HEOR used to fine-tune model**





# My experience

1. Much, much, better at summarising (dumbing down) than problem solving.
2. Will make things up, with confidence.
3. Volume matters - very good at small tasks. Hard to articulate nuance of bigger tasks.
4. Carefully written prompts are crucial, garbage in, garbage out.
5. Replacement for human Googling + Stack Overflow.

# Potential

1. More efficient model builds.
2. Freeing up time for methods development.
3. Catching bugs & errors. If review > build then particularly useful for ERGs.
4. Making models more transparent to stakeholders?
5. Cross-pollination of ideas with other disciplines.

# Challenges

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3. If simpler tasks (e.g. writing/reviewing specific functions) are done by genAI, how do people learn & develop?
4. How do we keep the human in the loop?! (Do we need to?)



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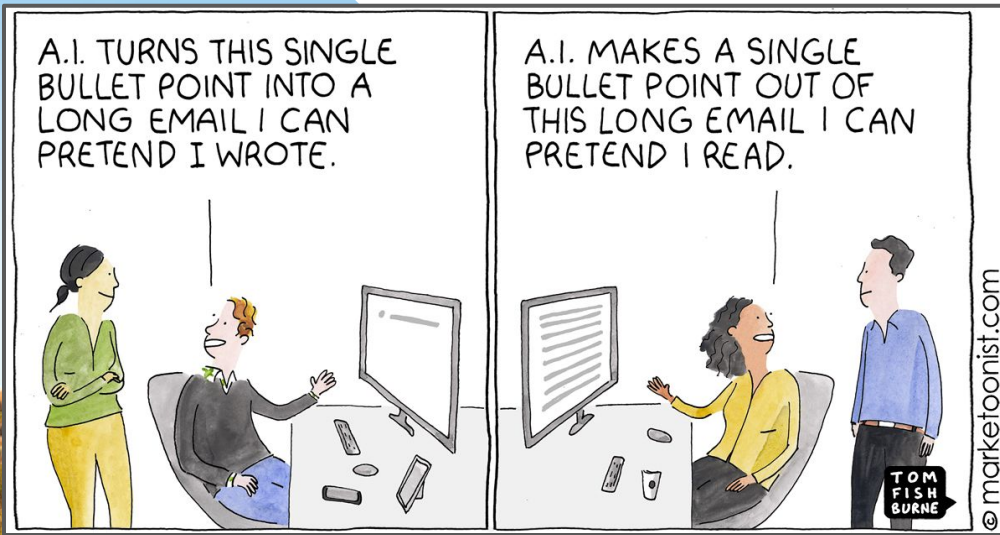




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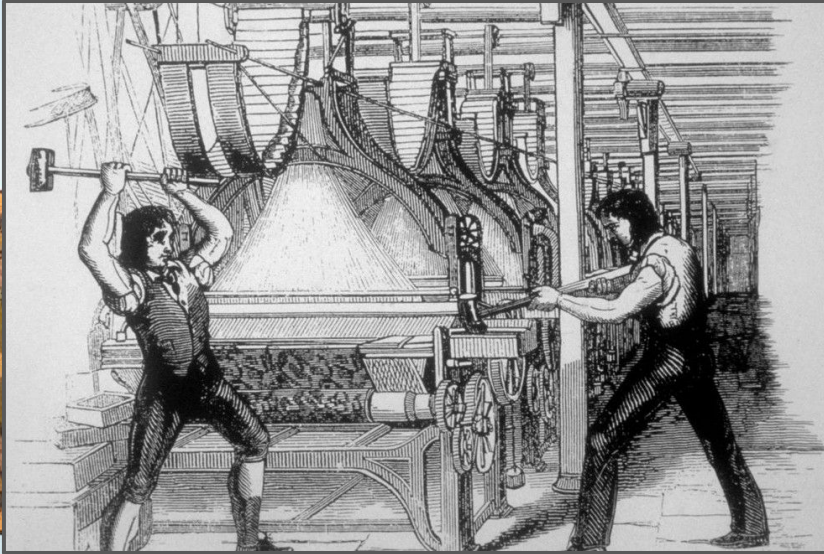
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